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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,506	12/11/2003	Harvey L. Berger	NGC-262/22-0177	9200

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EXAMINER

JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
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2614

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/733,506	Applicant(s) BERGER ET AL.	
	Examiner ALEXANDER JAMAL	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 1-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomlinson et al ["Fade Countermeasures at Ka Band: Direct Inter-establishment Communications Experiment (DICE)", IEE Colloquium on 17 Dec. 1991, Pages 4/1-4/6].

Regarding claim 6, Tomlinson et al discloses digital communication apparatus, as shown in Fig. 1, comprising:
means, which is obvious to have the 'means' to perform the feature having the rate of an information data stream to be transmitted from an original signaling rate R to a selected reduced rate using a direct-sequence spread spectrum system [Fig. 1];
a pseudorandom noise source (PRC generator) generating a stream of practically random data at the original signaling rate R (i.e. at a chip rate) [Fig. 1];
means (Exclusive OR) for logically combining the reduced signaling rate information data stream and the data stream from the pseudorandom noise generator Fig. 1]; and
means (channel) for transmitting the logically combined data stream at the original signaling rate [Fig. 1]; wherein signal-to-noise performance is enhanced (due to the use of the higher spreading factor) to compensate for rain attenuation (i.e. the fading of signals due to rain) without increasing power levels [page 2; lines 6-10; Page 2, Section 2, line 1 to page 3, line 6].

Regarding the claimed amount rate for reducing the rate of an information data stream to be transmitted from an original signaling rate R to a selected reduced rate using a direct-sequence system [Fig. 1], it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to select any power value of a fraction of a full data rate including a ¼ of the full data rate as a matter of design choice. Further it would have been obvious to one skilled in the art that the signal amplitude (energy per bit), the data rate and power flux density were all well known terms used to characterize communication signals and further that said terms were all directly related since they derive from the same signals. It would have been obvious to utilize the processing as disclosed by the prior art in order to optimize as many of said terms as possible for a given application.

Expectedly, **claims 1 and 11** are essentially similar to claim 6 and are rejected for the reasons stated above.

Regarding claim 7, Tomlinson et al further discloses the digital communication apparatus, wherein: the means for logically combining comprises a logical Exclusive OR circuit [Fig. 1].

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Regarding claim 8, Tomlinson et al further discloses the digital communication apparatus comprising:
means (demodulator and despreader) for receiving and demodulating the logically combined data stream [Fig. 1];
a second pseudorandom noise source (sync PRC generator) located near the means for receiving, for generating a stream of data identical with the one produced by the first pseudorandom noise source [Fig. 1]; and
means (Exclusive ORs) for logically combining the demodulated data stream with the data stream from the second pseudorandom noise source, for recovering the original data stream at the reduced signaling rate [Fig. 1; Page 2, Section 2, lines 1-26].

Claim 2 is essentially similar to claim 8 and is rejected for the reasons stated above.

Regarding claim 3, Tomlinson et al further discloses the method, wherein the randomizing step comprises:
generating a pseudorandom noise sequence of bits at the original signaling rate R, which is equal to the chip rate ; and logically combining the pseudorandom noise sequence with the reduced signaling rate signals to produce the randomized signal [Fig. 1; page 2, Section 2, last paragraph].

Regarding claim 10, since Tomlinson et al teach modulating a carrier with an input data stream using a known modulation technique for transmission [Fig. 1; pages 2-3, Section 2,], it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to employ any one of known modulation techniques including Binary Phase-Shift Keying (BPSK) as a matter of design choice.

Claim 13 is essentially similar to claim 10 and is rejected for the reasons stated above.

Regarding claim 4, Tomlinson et al further discloses the method, wherein the logically combining step comprises performing a logical exclusive OR operation [Fig. 1].

Regarding claim 5, the limitations are shown in claim 8 above.

Regarding claims, 9 and 12, data buffers (or memory of storage) are inherently present with the Tomlinson et al system.

Response to Arguments

1. Applicant's arguments have been fully considered but they are not persuasive.

Per applicant's argument that the prior art does not disclose a set value for the decrease in the data rate, the examiner notes that applicant's claims do not either.

Applicant's claims recite a relative relationship between the initial data rate and the

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decreased data rate, which is not a set value. Applicant's claims are directed to an inherent relationship between the data rate, and power (energy amplitude) level and SNR and BER that is are inherent to any communications signals. It is obvious to experiment and design with known signal characteristics in order to design to the particular application.

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

/Alexander Jamal/

Primary Examiner, Art Unit 2614

Examiner Alexander Jamal

April 2, 2009